REMARKS

Entry of the foregoing, reexamination and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 16-35 were pending, with claims 24-35 being withdrawn from consideration. By the present response, claim 16 has been amended and claims 36-37 have been added. Thus, upon entry of the present response, claims 16-23 and 36-37 remain pending and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: page 3, lines 6-7; page 15, lines 3-7 and 16-19; page 22, lines 14-15; and the original claims.

CLAIM REJECTIONS UNDER 35 U.S.C. §102

Claims 16-18 and 20 stand rejected under 35 U.S.C. §102(b) as being anticipated by the journal article by Vidmar et al. (hereafter "*Vidmar et al.*") on the grounds set forth on page 2 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

Before turning to the specific substance of the grounds for rejection, some of the relevant governing legal principles should be recognized. When assertions are made based upon features that are not expressly disclosed in the prior art, the Federal Circuit has repeatedly stated that in order to establish the inherency of the missing element it must be shown that the missing element must necessarily be present in the reference, and would be recognized as such by those persons of

ordinary skill in the art. *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 20 USPQ2d 1746, 1749-50 (Fed. Cir. 1991); *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (C.C.P.A. 1981) ("inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient"); *Standard Oil Co. v. Montedison, S.p.A.*, 664 F.2d 356, 372, 212 USPQ 327, 341 (3rd Cir. 1981) (for a claim to be inherent in the prior art it "is not sufficient that a person following the disclosure sometimes obtain the result set forth in the [claim]; it must invariably happen").

If rejecting a claim requires reliance upon the alleged inherent features of the prior art, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original) (Applicant's invention was directed to a biaxially oriented, flexible dilation catheter balloon (a tube which expands upon inflation) used, for example, in clearing the blood vessels of heart patients. The Examiner applied a U.S. patent to Schjeldahl which disclosed injection molding a tubular preform and then injecting air into the preform to expand it against a mold (blow molding). The reference did not directly state that the end product balloon was biaxially oriented. It did disclose that the balloon was "formed from a thin flexible inelastic, high tensile strength, biaxially oriented synthetic plastic material." Id. at 1462 (emphasis in original). The Examiner argued that Schjeldahl's balloon was inherently biaxially oriented. The Board reversed on the basis that the Examiner did not provide objective evidence or cogent technical reasoning to support the conclusion of inherency.).

It is legal error to rely upon inherency as some form of substitute for a teaching or suggestion supporting an assertion of obviousness:

> [A] retrospective view of inherency is not a substitute for some teaching or suggestion which supports the selection and use of the various elements in the particular claim combination. *In re Newell*, 13 QSPQ2d 1248, 1250 (Fed. Cir. 1989)

The structure implied by process steps should be considered when assessing patentability where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979).

Now, turning to the substance of the presently claimed invention, the presently claimed invention is directed to a composition having a combination of properties which render desirable for particular applications, such as a multifunctional catalyst. As discussed, for example, on page 1, lines 35-36 of the present specification, it is desirable to provide a composition having as high of reducibility as possible when utilizing the composition in the above-mentioned multifunctional catalyst capacity. However, as discussed, for example, at page 2, lines 1-7 of the present specification, the state of the art is such that to produce a composition having a relatively high reducibility, such compositions exhibit a rather low specific surface area.

Thus, according to the principles of the present invention, a composition has been produced in a manner such that the resulting composition exhibits, in combination, a high specific surface area and a high reducibility value.

Thus, a composition formed according to the principles of the present invention is defined in amended claim 16. Amended claim 16 recites:

> *16. A composition based on cerium oxide and on zirconium oxide in a Ce/Zr atomic proportion of at least 1, exhibiting a level of reducibility of at least 70%, and a specific surface of at least 15 m^2/g after calcining at least once at a temperature of at least 850°C.*

Vidmar et al. fails to anticipate the composition of claim 16.

Vidmar et al. is an article describing the effects of trivalent dopants on the redux properties of mixed cerium/zirconium oxides. As admitted on page 3 of the Official Action, *Vidmar et al.* fails to disclose a composition having the claimed reducibility value as that defined in claim 16. As evident from the above, claim 16 clearly requires a composition exhibiting a level of reducibility of at least 70%. Admittedly, *Vidmar et al.* fails to expressly disclose at least this aspect of the presently claimed invention.

Nevertheless, it is further asserted on page 3 of the Official Action that:

> . . . the catalyst disclosed therein would have a reducibility in the range of that instantly claimed because the composition of the mixed oxide and the surface area of the catalyst in Vidmar are the same as those of the instant invention, thus the other properties must also be the same.

These assertions are respectfully traversed.

First, the surface area recited in the presently claimed invention and the surface areas reported in Table 1 of *Vidmar et al.* are not the same.

The surface area values reported in Table 1 of *Vidmar et al.* are measured after calcining at 773°K (i.e., 500°C) for 5 hours. The samples are characterized as "fresh." By contrast, the surface area of the composition recited in amended claim 16 is determined after calcination at a significantly higher temperature. Higher calcination temperatures negatively impact the surface area of the recovered material. There is no basis to assert that the materials described in *Vidmar et al.*

possess the surface area stability which would be required to exhibit surface area values, after calcination at a temperature of at least 850°C of at least 15 m^2/g, as required by the presently claimed invention. Thus, not only does *Vidmar et al.* fail to explicitly anticipate the claimed surface area limitation presented in amended claim 16, it is also not inherent thereto. Reconsideration and withdrawal of the rejection is respectfully requested.

Applicants also traverse the assertion that mixed oxides having the same chemical composition must necessarily have the same properties. This assertion is clearly false. As universally recognized in this area of technology, not only does the chemical composition of a material impact its properties, the morphology of the product also often times plays at least as significant a role in the underlying properties of the material as does the particular chemical constituents. For example, two mixed oxides could have the same chemical constituents, yet one oxide have a higher porosity than the other. The oxide with the higher porosity would exhibit different physical behaviors and properties than the oxide with the relatively lower porosity. For example, mixed oxides exhibiting a higher porosity level typically also dissolve faster. This is but one general example.

The novel and unique combination of properties exhibited by the composition of the presently claimed invention can be traceable at least in part to the manner in which the composition is prepared, which is detailed at length in the present specification. It is a further universally recognized principle in this technology that the method by which such materials are prepared can greatly influence the resulting morphology and/or physical properties of the resulting materials. Since the method of forming the materials of the presently claimed invention differ greatly from the

methods of forming the mixed oxides in *Vidmar et al.*, it stands to reason that the resulting materials will in fact possess different properties.

For at least the reasons explained above, reconsideration and withdrawal of the rejection of claim 16 is respectfully requested.

The remaining claims depend from claim 16. Thus, these claims are also distinguishable over *Vidmar et al.* for at least the same reasons noted above.

Claims 16-19 stand rejected under 35 U.S.C. §102(b) as being anticipated by the journal article by Gonzalez-Velasco et al. (hereafter "*Gonzalez-Velasco et al.*") on the grounds set forth on page 3 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

Gonzalez-Velasco et al. is an article explaining the contribution of Cr/Zr mixed oxides to the activity of three-way catalysts. Table 2 of *Gonzalez-Velasco et al.* is cited in support of the grounds for rejection. Interestingly, the only four materials reported therein in the form of cerium/zirconium mixed oxides where the ratio of Ce/Zr is at least one are reported as four compositions synthesized by Rhodia. Rhodia is the assignee of the present application. Rhodia advises that none of the four compositions reported on page 168 of *Gonzalez-Velasco et al.* possess the combination of reducibility of at least 70% and a specific surface area of at least 15 m^2/g, as required by the presently claimed invention. With this in mind, and as readily admitted on page 3 of the Official Action, *Gonzalez-Velasco et al.* fails to explicitly disclose the required reducibility value set forth in claim 16 above. Nevertheless, much as with the first grounds for rejection of claim 16 discussed above, it is further asserted that the catalyst described in *Gonzalez-Velasco et al.* would inherently have the same properties as that of the presently claimed invention

because the composition and surface area are alleged to be the same. These assertions are respectfully traversed for the same reasons explained above. Namely, the fundamental assumption is entirely invalid. As explained above, chemical composition, and even surface area, are not the only factors which influence the properties of a resulting material. Instead, it is universally recognized in this art that the morphology of a particular material may greatly impact its physical properties and behaviors. The example of two otherwise chemically identical materials, which can even have the same surface area yet different porosity values, as explained above, may exhibit significantly different physical properties. Coupled with applicant Rhodia's knowledge of its own materials, applicants respectfully submit that the grounds for rejection fall short of establishing *prima facie* case of anticipation based upon the principles of inherency upon which the grounds for rejection clearly rely. Reconsideration and withdrawal of the rejection is respectfully requested.

The remaining claims depend from claim 16. Thus, these claims are also distinguishable over *Gonzalez-Velasco et al.* for at least the same reasons noted above.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

Claims 21-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Vidmar et al.* on the grounds set forth on page 4 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

It is alleged on page 4 of the Official Action that it would have been obvious to one of ordinary skill in the art to employ the use of a precious metal in order to form a three-way catalyst. Setting aside the merits of this assertion for the moment, the

grounds for rejection fail to make up for the deficiencies noted above in connection with the teachings of *Vidmar et al.* with respect to the requirements of claim 16. Thus, claims 21-23 are also distinguishable over *Vidmar et al.*, via their dependency upon claim 16, for at least the same reasons noted above. Reconsideration and withdrawal of the rejection is respectfully requested.

Claim 21 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Gonzalez-Velasco et al.* on the grounds set forth on page 5 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

It is also asserted on page 5 of the Official Action that it would have been obvious to one of ordinary skill in the art to employ the use of a precious metal in order to form a three-way catalyst. However, again setting aside the merits of this assertion for the moment, the grounds for rejection fail to address the deficiencies of the disclosure of *Gonzalez-Velasco et al.* with respect to the requirements of claim 16 above. Thus, claim 21 is also distinguishable over *Gonzalez-Velasco et al.* for at least the same reasons noted above in connection with a discussion of the grounds for rejection of claim 16. Reconsideration and withdrawal of the rejection is respectfully requested.

OBVIOUSNESS-TYPE DOUBLE PATENTING

Claims 16-22 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 17, 19 and 28 of copending Application No. 10/549,531 on the grounds set forth no page 6 of the Official Action.

Applicants respectfully traverse this rejection.

As expressly admitted on page 6 of the Official Action, numerous limitations in the claims of the present application are absent from the claims of copending Application No. 10/549,531. For example, as admitted on page 6 of the Official Action, the reducibility required by the presently claimed invention is not recited in the claims of the above-mentioned copending application. Nevertheless, it is asserted that the catalyst (disclosed) therein would have a reducibility in the range of the instantly claimed invention because the composition of the mixed oxide in the surface area of the catalyst in copending Application No. 10/549,531 is the same as that of the present invention. Thus, the other properties must also be the same. Applicants respectfully traverse this assertion for the same reasons explained herein above. That being the case, the grounds for rejection fail to establish that the claims of the present application are anticipated or rendered obvious by the claims of copending Application No. 10/549,531. Thus, reconsideration and withdrawal of the rejection is respectfully requested.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: February 11, 2009 By: _____

Scott W. Cummings
Registration No. 41,567

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620